

CLAIMS:

1. A press forming machine comprising:
 - a fixed plate;
 - a pressure plate facing the fixed plate, having a forming space between the pressure plate and the fixed plate and being capable of reciprocating;
 - a plurality of driving shafts for pressing the pressure plate at three or more respective pressure points distributed on the pressure plate by engaging with the pressure plate;
 - a plurality of driving sources for respectively driving the plurality of driving shafts;
 - control means for independently driving and controlling each of the plurality of driving sources; and
 - displacement measuring means for measuring a positional displacement of the pressure plate adjacent each of the pressure points;
 - wherein at least one pressure point (hereinafter referred to as "central pressure point") among the pressure points is set between or surrounded by other pressure points (hereinafter referred to as "peripheral pressure points"),
 - a gap between a driving shaft engaged with the pressure plate at the central pressure point and the pressure plate is larger than a gap between a driving shaft engaged with each of the peripheral pressure points and the pressure plate, and
 - the control means is provided with means which measures the positional displacement adjacent each of the pressure points by the displacement measuring means on each of a plurality of operation stages during a press-forming operation, detects a state in which the entire pressure plate is kept at desired displacement positions, extracts a control data for each of the plurality of driving sources to keep the entire pressure plate at the desired displacement positions, supplies the extracted control data to each of the plurality of driving sources, and individually drives the plurality of driving sources.
2. A press forming machine as set forth in claim 1, wherein the gap between the driving shaft engaged with the pressure plate at the central pressure point and the

pressure plate ranges between 0.01 and 0.2 mm.

3. A press forming machine as set forth in claim 1 or 2, wherein

the control means is provided with means which measures a positional displacement adjacent each of the peripheral pressure points by the displacement measuring means on each of the plurality of operation stages during the press-forming operation, detects a state in which the vicinities of the peripheral pressure points of the pressure plate are kept at a desired displacement position, extracts a control data for each of the plurality of driving sources corresponding to the peripheral pressure points to keep the vicinities of the peripheral pressure points at the desired displacement position, supplies the extracted control data to each of the plurality of driving sources, and individually drives each of the plurality of driving sources.

4. A press forming machine as set forth in claim 3, wherein

the control means is provided with means which measures a positional displacement adjacent each of the peripheral pressure points by the displacement measuring means on each of the plurality of operation stages during the press-forming operation, detects a state in which the vicinities of the peripheral pressure points of the pressure plate are kept horizontal, extracts a control data for each of the plurality of driving sources corresponding to the peripheral pressure points, supplies the extracted control data to each of the plurality of driving sources, and individually drives each of the plurality of driving sources.

5. A press forming machine as set forth in claim 1 or 2, wherein

the control means is provided with means which measures a positional displacement adjacent each of the pressure points by the displacement measuring means on each of a plurality of operation stages during the press-forming operation, detects a state in which the vicinities of the peripheral pressure points are kept at a desired displacement position and a state in which the vicinity of the central pressure point is kept within a predetermined value from the desired displacement position, extracts a control

data for each of the plurality of driving sources corresponding to the peripheral pressure points to keep the vicinities of the peripheral pressure points at the desired displacement position and a control data for the driving source corresponding to the central pressure point to keep the vicinity of the central pressure point within a predetermined value from the desired displacement position, supplies the extracted control data to each of the plurality of driving sources, and individually drives each of the plurality of driving sources.

6. A press forming machine as set forth in claim 5, wherein

the control means is provided with means which measures a positional displacement adjacent each of the pressure points by the displacement measuring means on each of the plurality of operation stages during the press-forming operation, detects a state in which the vicinities of the peripheral pressure points are kept horizontal and a state in which the vicinity of the central pressure point is kept within a predetermined value from a horizontal displacement position, extracts a control data for each of the plurality of driving sources corresponding to the peripheral pressure points to keep the vicinities of the peripheral pressure points horizontal and a control data for the driving source corresponding to the central pressure point to keep the vicinity of the central pressure point within the predetermined value from the horizontal displacement position, supplies the extracted control data to each of the plurality of driving sources, and individually drives each of the plurality of driving sources.